

THE HISTORY AND ARCHAEOLOGY OF QUEEN'S REDOUBT, SOUTH AUCKLAND

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Abstract. Archaeological excavations at Queen's Redoubt, Pokeno, in 1992 provide new information on the defences, internal arrangement and material culture of the fortification. The history of Queen's Redoubt is outlined, together with the historic landscape context of contemporary Maori and European sites. As British Army headquarters for the invasion of the Waikato, which led to the Waikato War of 1863–64, Queen's Redoubt was one of the most important fortifications of the New Zealand Wars. The Waikato War was the most significant campaign of the 19th century armed struggle between Maori and Europeans, in terms of the scale of fighting and the outcome for later New Zealand history.

KEYWORDS: New Zealand Wars; fortification; redoubt; 19th century; British Army.

INTRODUCTION

Queen's Redoubt, Pokeno, was the British Army headquarters for the July 1863 invasion of the Waikato. The old fort site is now at the south end of Pokeno, between the Great South Road, which runs through the township, and the Auckland–Hamilton motorway to the east (New Zealand Archaeological Association site record number S12/23 (formerly N46–47/188); 37° 14.80 S, 175° 1.53 E). Figures 1 and 2 give the location of the redoubt, and show it from the air prior to construction of the new motorway in the late 1990s. The north and east sides and most of the interior of the redoubt are on land owned since March 2000 by the Queen's Redoubt Trust. Although largely levelled, the old earthworks can be traced on Trust property before disappearing under houses on the south side of Selby Street.

In February 1992 excavations were carried out at Queen's Redoubt to learn as much as possible about the defences and interior of the fort in two weeks that were available. The work came about as a result of an application to the New Zealand Historic Places Trust by the then owners, Messrs Kerry and Lionel Piggott, for an authority to modify the site. The authority was made subject to an excavation, which the author was asked to direct. The work was paid for by the New Zealand Historic Places Trust.

POKENO AND DISTRICT

Queen's Redoubt was located with regard to strategic considerations, at the southern limit of European settlement south of Auckland, and at the gateway to the Waikato district—still in Maori hands prior to the 1863–64 campaign. The fort was situated in a broad valley, with the

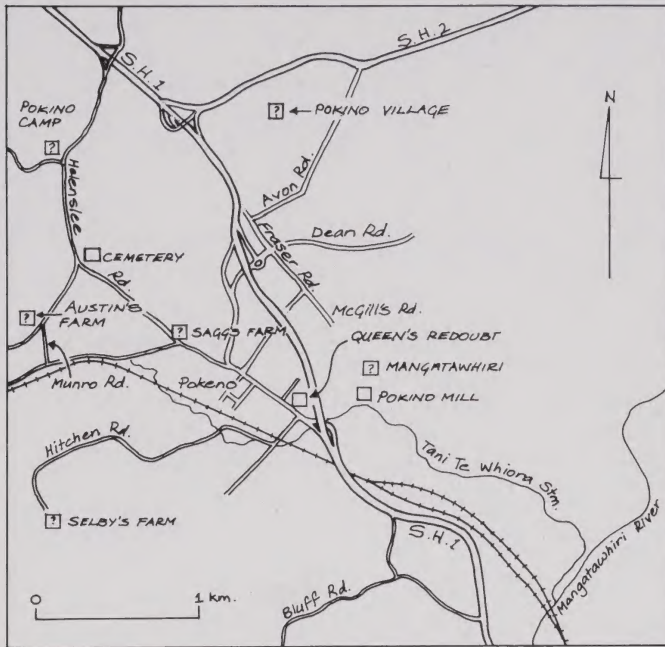


Fig. 1. Historic sites of the late 1850s and early 1860s in the Pokino district. Question marks show locations not yet confirmed by archaeological evidence.

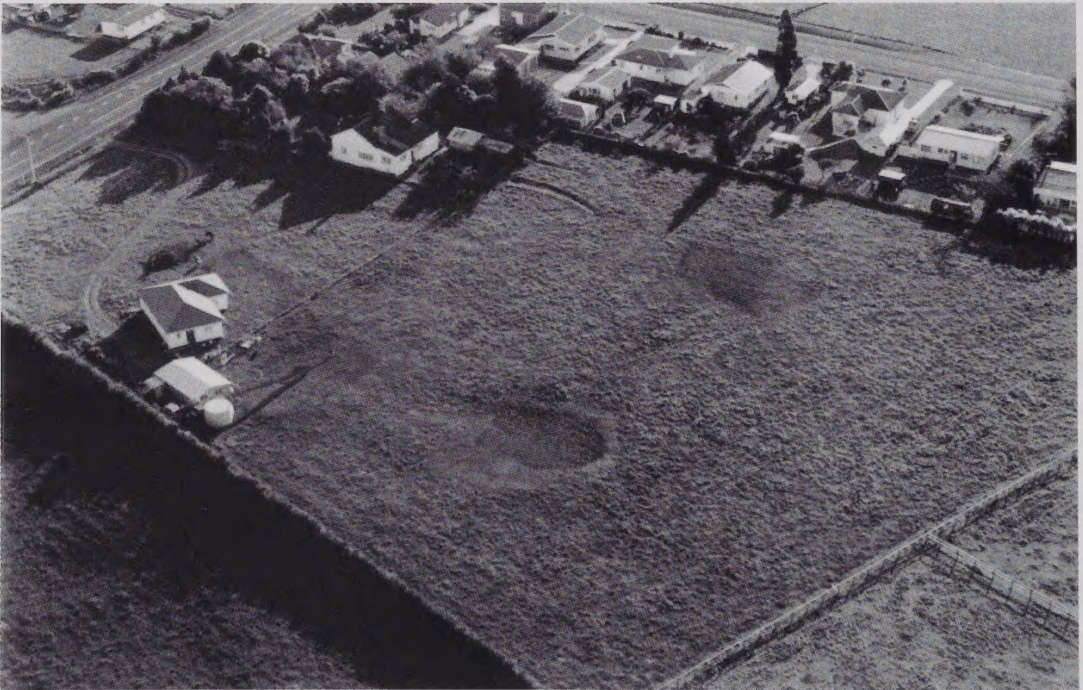


Fig. 2. Aerial view of Queen's Redoubt site from the south-east. Selby Street is at the top, with houses along its near side. At top left is the Great South Road. The photograph dates from just after the 1992 excavations; refilled excavation areas can be seen in the paddock, with the north-east corner of the redoubt (Area IV) visible at the centre of the photograph.

important matter of no nearby higher ground to command the interior. At the time the level valley floor was under grass and fern, allowing easy development of the site. Nearby spurs were under bracken and tutu. To the north and north-east was higher ground, where rich volcanic soil was under cultivation by Ngati Tamaoho people before the war. Hill country further north was covered in dense forest, through which the troops constructed an extension of the Great South Road in the first half of 1862. When Queen's Redoubt was established in winter that year there were already a Maori settlement and flour-mill, three European farms and several military camps in the district (Fig. 1).

POKINO

The name 'Pokeno' comes from a pre-war settlement of the Ngati Tamaoho people, which was not, however, at the present township site. Figure 3 shows the location of the 'Pokino' Maori settlement from a 'Map shewing the Line of Posts established between the Frith of Thames and the Mangatawhiri River', published by the War Office in London in the official journals of the Deputy Quartermaster General in New Zealand, Crimea veteran Lieutenant Colonel Dominic Jacotin Gamble (War Office 1864). Ngati Tamaoho informants have stated to the writer that the correct name for the Maori settlement, and hence now for the district as a whole, is 'Pokino', as indeed is commonly written in early military reports. The exact location of Pokino has not been found but was approximately as shown on Figure 1. A manuscript map of the Great South Road from Drury to the Waikato River, dated January 1862, also by Gamble (1862), notes 'To Pokino $\frac{3}{4}$ mile' at Austin's Farm on the Great South Road, where there was a camp of soldiers engaged on road works (see below).

John Martyn, a settler from the Ramarama district near Drury, visited Pokino village in 1860, describing it as approximately a mile from the well-known water-mill on the stream that runs through the valley.

'It is beautifully situated, having a fine view of the river, and the adjacent country. Indeed, one and all we thought it the prettiest place we have seen in New Zealand. The land is very good. Indeed, you seldom see Maoris choose bad land for cultivation. They were just harvesting their wheat, which is an excellent crop. They take great care of it, putting it in round mows like reed. They also have one of Ransome's portable threshing machines, and a mile from the settlement they have a flour mill, worked by water power. So you see in some respects they are not behind the Europeans. Maize, potatoes, peaches, and dried shark they have in abundance.' (Morris 1965: 102)

Photographs in the Alexander Turnbull Library attributed to Assistant Surgeon William Temple, Royal Artillery (later awarded a Victoria Cross at Rangiriri), include some likely to have been taken at Pokino village in early 1862. Morris (1965: 115–116) states that Pokino was destroyed by an unauthorised expedition of soldiers from Queen's Redoubt on the night of 11 July 1863, the eve of the crossing of the Mangatawhiri River at the start of the Waikato War. Colonel Gamble reports only that,

'The village of Pokino, two miles from the Queen's Redoubt, has been abandoned by the natives, who left behind four carts, flour, potatoes, &c., of which possession has been taken. An officer's picket of twenty men are sent there daily as a post of observation.' (War Office 1864: 46)



Fig. 3. The Maori settlement of Pokino is marked on part of a 'Map shewing the Line of Posts established between the Frith of Thames and the Mangatawhiri River', from the journals of the Deputy Quartermaster General in New Zealand (War Office 1864). Also shown are Maori settlements, military posts and pre-war European settlers south of the Waikato River.

MANGATAWHIRI AND THE POKINO MILL

In March 1858 members of the Austrian 'Novara' scientific expedition visited a Maori settlement called 'Mangatawhiri' close to the Pokino mill. It seems likely Mangatawhiri was abandoned for the new site at Pokino between then and Martyn's visit in 1860. There is no indication of Mangatawhiri being occupied when Queen's Redoubt was established in 1862. 'Novara' scientist, Ferdinand von Hochstetter, describes Mangatawhiri as having,

'...about twenty huts with about 100 inhabitants, who are enjoying considerable wealth. They very recently had a neat flour-mill built by an Englishman, on a small stream running by the village, which cost them not less than £400. The volcanic soil of the neighbourhood is extremely fertile, and there is no scarcity of horses, cattle and pigs in these parts.' (Hochstetter 1867: 290)

Mangatawhiri village is located on Hochstetter's map of the Waikato and Rotorua districts (Hochstetter and Petermann 1864) near Tani Te Whiora stream, a tributary of the Mangatawhiri River. 'Novara' expedition artist Joseph Selleny's picture of the settlement shows a mix of Maori and European clothing, several pigs, two small whare in the foreground and others, including a larger house, beyond (Fig. 4). The distant skyline locates the settlement to the broad spur below the south end of today's McGill's Road, north of the stream. The mill itself would have been out of sight in the stream valley at or beyond the right end of the picture.

The flour-mill on Tani Te Whiora Stream (now also known as Leatham's Stream), was *ca* 150 m east of the present motorway bridge. A race from above a small waterfall carried water to the

For cultural reasons, this image has been removed.
Please contact Auckland Museum for more information.

Fig. 4. 'Dorf Manga tawhiri. Neuseeland'. Pencil drawing by Joseph Selleny of the Austrian frigate 'Novara', 1858. (Hocken Library)

mill *ca* 50 m downstream, where concrete foundations still hold the iron hub of a waterwheel. Below the mill, a 25 m long race with large boulders placed at each side returns the water to the stream. After the war a European flax-mill made use of the water-power and plant, replacing the flourmill on the site.

GREAVES' MAP

A map by Captain George Richards Greaves, 'Sketch of the Country on the Right Bank of the Waikato River near the Mouth of the Mangatawhiri', dated 5 May 1862 (Fig. 5), published in the 'Journals of the Deputy Quartermaster General in New Zealand' (War Office 1864), shows the Pokeno district before the Waikato War. Greaves served with the 70th (Surrey) Regiment, was Deputy Assistant Quartermaster General in New Zealand from January 1862 to January 1866, and is responsible for several maps of the Waikato campaign.

The map shows the original line of the Great South Road to Te Ia on the Waikato River, going past the Austin and Selby farms to traverse the hill south-west of today's Pokeno township before descending to cross the swamp to the river. At the left edge of the map the road forks at the corner of today's Helenslee and Munro Roads. Grey's road continued down Munro Road before climbing the hill south of the Pokeno Road (to Tuakau). 'P' marks the high point on the hill west of Pokeno. 'B' is Bluff Stockade.

Also shown is the branch road past Sagg's farm and Queen's Redoubt (E, C, D). The redoubt location was decided but construction had not begun by the date on Greaves' map. At the south end of the road on the right bank of the Mangatawhiri River is an 'Old Pah', which is described by Colonel Gamble (War Office 1864: 18) as standing 18 feet (5.5 m) above the swamp. It was here that the 14th Regiment crossed the river on 12 July 1863 to commence the Waikato War. The pa was then refashioned into a small stockade and earthwork fort to control the crossing-place.

Greaves' map locates three European farms in the Pokino district before the war. Sagg's farm is alongside the road to the mill—the road as far as the farm being made use of by the military in 1862, beyond which a new road diverged to the redoubt site. The farm buildings can be seen in two photographs of Queen's Redoubt (Figs 8 and 9), at the north end of today's Pokeno township. The Selby farmstead is shown near the west end of today's Hitchen Road, where it follows the original line of Great South Road up the hill. The farmhouse of Austin (or 'Austen', for example in Colonel Gamble's reports: War Office 1864: 1) was west of the original Great South Road, now Munro Road, *ca* 200 m south of the Helenslee Road corner.

European troops were occasionally camped at Selby's farm in 1862 and 1863. In late May 1862 and again in June General Cameron stayed there to review the work going on at Queen's Redoubt and Bluff Stockade (War Office 1864: 22, 24). For a few weeks from October that year the newly formed Forest Rangers were based at Selby's farm (Stowers 1996: 30).

POKINO CAMP

The first military camp set up in the Pokino district for troops engaged in road-making was on Austin's farm, where detachments of the 12th and 14th Regiments numbering 694 rank and file, plus officers, arrived on 26 December 1861 (War Office 1864: 5). Pokino (sometimes 'Pokeno') Camp was named after the nearby Maori village. Two photographs by Assistant Surgeon Temple (see above) show the camp in early 1862. The general view (Fig. 6) dates from before 7 April 1862 when a detachment of the 40th Regiment was added to the garrison (War Office 1864: 15). The other picture of the camp shows a group of officers including Lieutenant Charles James Urquhart, 65th Regiment, who left for England in April 1862 (War Office 1864: 18). All Temple's

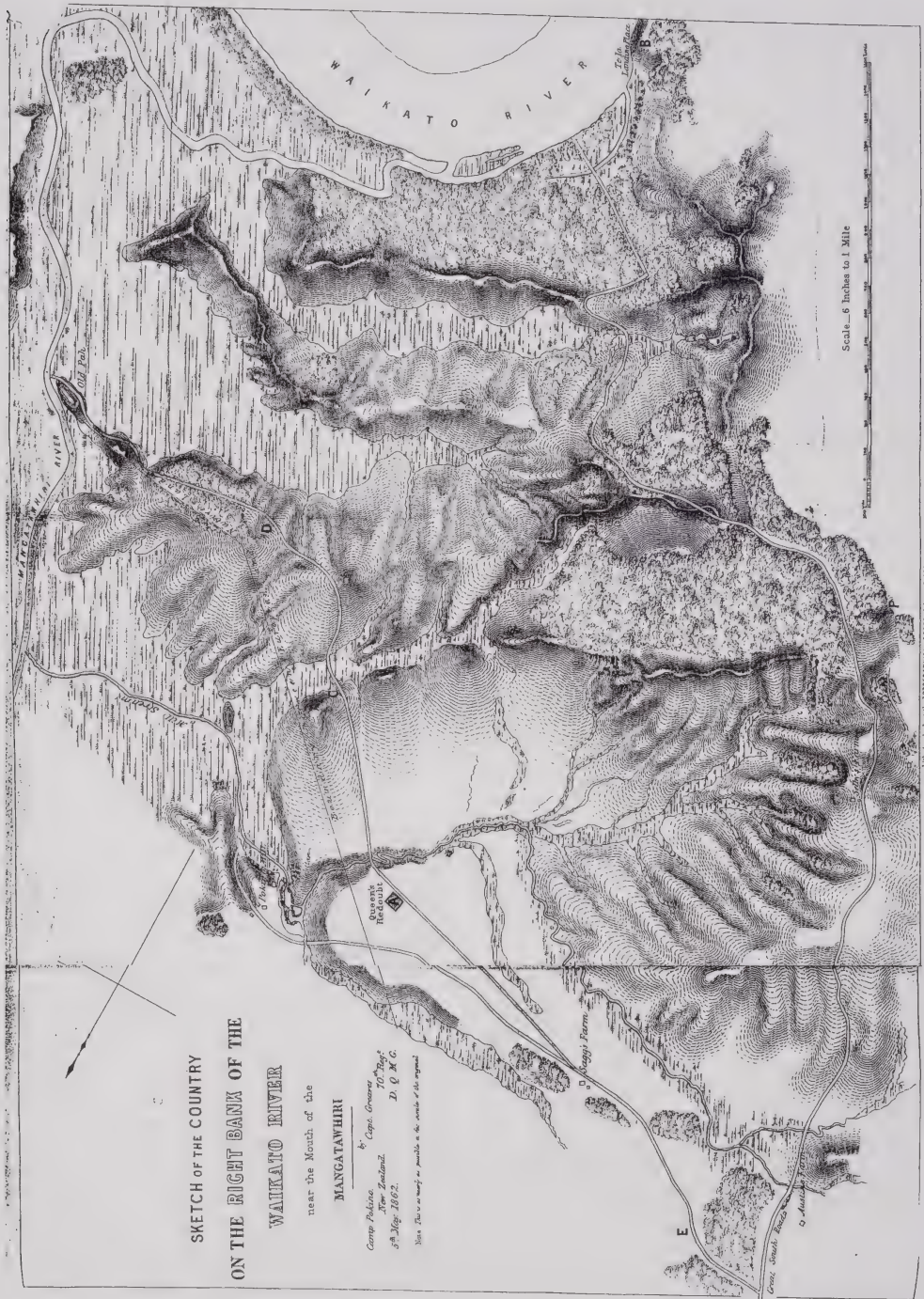


Fig. 5. 'Sketch of the Country on the Right Bank of the Waikato River' (Gamble 1864). Captain Greaves' 5 May 1862 map of the Pokeno district marks the location of Queen's Redoubt a month before construction work began. Other places are discussed in the text.



Fig. 6. 'Camp of the 2nd Battalion, 14th Regiment, and the 1st Battalion, 12th Regiment, Pokeno'. Pokeno Camp, early 1862. The view is to the south. A post-and-rail fence at left marks the Great South Road. Photograph probably by William Temple. (Urquhart Album, Alexander Turnbull Library)



Fig. 7. 'Mess Whare. 12th regt. Camp Pokeno. N.Z.' Officers in this photograph are, from left: Lieutenant W.L. Murphy, Lieutenant H.M. Lowry, Captain T.E. Miller, Major W.J. Hutchins, Lieutenant C.J. Urquhart (65th Regt), Lieutenant W.C.S. Mair and Captain F. Williams. All except Urquhart were with the 12th (East Suffolk) Regiment. Photograph taken by William Temple, early 1862. (Alexander Turnbull Library C15954)

photographs in the district are likely to date from this early 1862 visit. Urquhart's own album in the Turnbull Library is an important source of New Zealand War photographs.

Figure 6 looks south to the hill crossed by the Great South Road on its way to the Waikato River. A post-and-rail fence to the left marks the road; another fence runs through the camp into the gully at right. Camp Pokino was on the west side of Helenslee Road, at the present corner with an unnamed no-exit road, which runs west across a headwater gully of the Tani Te Whiora Stream. The photograph shows as many as 80 bell tents, three or more larger tents, and low, thatched buildings. In campaign conditions bell tents accommodated 12 rank and file. The commanding officer had his own, and other officers also had their own, or shared according to rank. Other tents accommodated the guard, commissariat, doctor and hospital. The 12th Regiment officers' mess in Figure 7 looks like a building at the left end of the camp near the road in Figure 6; it may have been made by local Maori.

Throughout the first half of 1862, Pokino Camp was the major road-making establishment at the forward end of the Great South Road, with hundreds of soldiers in residence. On 12 April the headquarters and part of the 40th Regiment was ordered from Baird's Farm near Ramarama to Pokino Camp (War Office 1864: 16). In June the workforce was broken up and Pokino Camp was abandoned. On 6 June, 449 officers and men of the 40th Regiment marched from Pokino to Baird's Farm on their way to winter quarters in Auckland (War Office 1864: 22). On 10 June the 14th Regiment left, followed three days later by remaining men of the 12th Regiment (War Office 1864: 24). By this time Queen's Redoubt was under construction, and took over from Pokino Camp as the major military base at Waikato's northern frontier.

BLUFF STOCKADE

The decision to establish a post near the Te Ia landing place on the Waikato River was taken in March 1862 (War Office 1865: 73), but it was not until 19 May that 50 men from the 12th, 14th and 65th Regiments moved there from Pokino Camp (War Office 1864: 20). Carpenters were already at the site preparing timber for huts (War Office 1864: 21). A week later 50 more men were added to the working party at the stockade.

Bluff Stockade was built of split 14 ft (4.3 m) lengths of tree trunk, 4 ft in the ground and 10 ft above. The sides were 50 and 46 feet (15 and 14 m) in length. Inside were huts for the men and a commissariat store and magazine (War Office 1864: 21). Bluff Stockade was important landing place and staging post on the Waikato River throughout the war of 1863–64.

QUEEN'S REDOUBT AND THE WAIKATO WAR

GREAT SOUTH ROAD

When George Grey returned to New Zealand in September 1861 to commence his second term as governor, he quickly saw that Tainui tribes and the King Movement (Kingitanga) lay at the heart of resistance to British law and government. The primary objective of Kingitanga was to develop a government to rule over Maori, just as the Queen and colonial government ruled over Pakeha. In effect, there would be parallel states. Also, the King Movement firmly blocked expansion of the Pakeha settlement of Auckland south into the rich lands of the Waikato. Grey determined to overcome the challenge to British authority, even if it meant war.

In a letter of 19 December 1861, after a visit to the Waikato, Grey asked General Cameron to put the troops to work on constructing a road from Drury to the Waikato River, in order to, '... undertake either defensive or aggressive operations against an enemy as circumstances may require' (War Office 1865: 69). At the time there was a metalled road from Auckland as far as

Papakura, and a clay road a further three miles to Drury. In May 1853 a surveyor by the name of Hayr had fixed on a route through the ranges between Ramarama and Pokeno, which was soon after made into a bridle track (Morris 1965: 95). In the late 1850s improvements were made to the track through the bush (see also Hochstetter 1867: 289–290), but this was not an all-weather road for wheeled transport and large bodies of men, as was now required.

The troops began marching out from their quarters at Auckland and Otahuhu on Christmas Eve 1862 (War Office 1864: 1). Two days later there were 2300 men in four camps between Drury and Pokeno. Work on the road itself commenced on 1 January 1862 (War Office 1864: 3). Detailed reports on the road-work south of Drury in the summer, autumn and early winter of 1862, are given in Colonel Gamble's reports (War Office 1864). The task of cutting through thick bush country and over steep hills, and forming and metalling the new road to Pokeno and the Waikato River, was completed at one o'clock on 18 June 1862 (War Office 1864: 24).

QUEEN'S REDOUBT

On 20 March 1862 General Cameron reconnoitred a '...proposed line of extension from Great South Road, to the Mangatawhiri River, by which route any military operations in the Waikato country would be undertaken' (War Office 1864: 14). Four days later Grey wrote to Cameron asking that a post for 500 men be established near the Mangatawhiri River. Cameron replied, agreeing with Grey and adding that he wished also to establish a post on the Waikato River near Havelock (War Office 1865: 73). This was to be the Bluff Stockade. On April 12 Cameron decided on the location of a military post for 450 men near Pokino (War Office 1864: 16). On May 28 General Cameron again visited the site, and fixing the position of the redoubt and encampment for the men (War Office 1864: 22). Cowan (1922–23 I: 242) gives the place-name 'Te Kūi' at the redoubt site, and Lennard (1986: 20) gives 'Te Ruato'. The source is not given for either name.

Gamble (War Office 1864: 17) relates some of the considerations regarding the location of the new post:

'...the force at post A [see Fig. 5] would be immediately available for a forward movement, and the position itself become favourable for the formation of a military dépôt. The situation is open, clear of the bush, and the nearest commanding height in the neighbourhood is 800 yards distant.

The troops to be there stationed will be hutted and entrenched, and arrangements have been entered into with contractors for the delivery of sawn timber on the spot.'

Work began immediately on supplying necessary timber to the site. The contractors, however, soon encountered problems. Those who had undertaken to deliver 100,000 feet of sawn timber to Pokeno by 1 June gave up their contract after visiting Pokeno in late April, and discovering unmetalled sections of road that were virtually impassable after two or three days of rain (War Office 1864: 18).

On 9 June 1862 the site of Queen's Redoubt was occupied by 150 men of the 70th Regiment from the Baird's Farm camp at Ramarama, and 140 of the 14th Regiment from Camp Pokino (War Office 1864: 24). On 13 June General Cameron inspected work on the new post. Colonel Gamble writes:

'This redoubt will be 100 yards square, with a caponnière at each of two opposite angles for the defence of the ditch. A commissariat store, hospital, and huts, for the accommodation of the troops, will be provided inside.' (War Office 1864: 24)

On 18 June 120 men of the 65th Regiment from Baird's Farm joined the troops at the Queen's Redoubt site (War Office 1864: 24), so that there were more than 400 men working on the fort's defences, buildings and other facilities. Rank and file were all under cover by 28 September and officers three weeks later (War Office 1864: 26).

Orders were given on 1 November 1862 for completing a 30 ft (9 m) wide road to the Mangatawhiri River; it was commenced two days later (War Office 1864: 26). At the end of November another company of the 40th Regiment arrived at Queen's Redoubt, and by early December there were 370 men were working on the road southwards (War Office 1864: 28). This section of road was completed on 31 March 1863. Meanwhile, orders were given on 19 February for the erection of an 'electric telegraph' wire between Auckland and Pokeno (War Office 1864: 29). Construction commenced on 17 March, and by early July it had reached Drury (War Office 1864: 42), just in time for use in organising troop movements between Auckland, Otahuhu and Drury in the lead-up to the Waikato War. On 15 August the line of telegraph was surveyed from Drury to Pokeno.

THE CAMPAIGN

On 11 July 1863, one day before the start of the Waikato War, General Cameron moved his headquarters to Queen's Redoubt (War Office 1864: 44). The redoubt was headquarters of the British Army in New Zealand until the fight at Rangiriri on 20–21 November when Cameron shifted up-river to Rangiriri, in readiness for the next phase of the war.

On 12 July men of the 14th (Buckinghamshire) Regiment crossed the Mangatawhiri Stream and took up positions on the spur beyond (overlooking the present railway line and State Highway 1), thus signalling the start of the Waikato War. Over the following spring, summer and autumn British troops and other government forces advanced south to Te Awamutu and beyond, many thousands passing through Queen's Redoubt on their way to war.

For some time the fort was itself in the front line. In July, August and September 1863 there was fighting on or near the Great South Road north of Queen's Redoubt, and Maori attacks on European farmhouses and outposts in South Auckland districts. Bush was felled on both sides of the road to prevent more ambushes of military and other parties on the road. On 2 September Ensign Dawson of the 2nd Battalion 18th Royal Irish was in charge of a patrol from Queen's Redoubt that was attacked near the nearby Maori village of Pokino, from which the inhabitants had been driven when the war began.

On 7 September the supply depot at Camerontown down-river from Tuakau was taken and sacked by Maori forces. The firing was heard at Alexandra Redoubt (above the river at the present Tuakau bridge) and Captain Swift led a party from that post to intercept the attackers. In the skirmish that followed Swift was killed and his second-in-command, Lieutenant Butler, wounded. It was left to Colour-Sergeant McKenna to extricate the small force—for which he was awarded the Victoria Cross. McKenna's V. C. and New Zealand War Medal are on display in the Auckland Museum.

In late November Cameron overcame the Maori defensive line at Rangiriri and the way was opened to the heart of the Waikato. At the same time troops landed on the western side of the Firth of Thames and three new redoubts—the Miranda, Esk and Surrey—were thrown up between there and Queen's Redoubt. These were to put an end to Maori control of the Hunua Ranges, from which the Great South Road had come under attack earlier in the war.

Thus Queen's Redoubt was at the heart of a network of Pakeha fortifications—down the Great South Road from Auckland, west to the rich lowlands between Manukau Harbour and the Waikato River, east to the Firth of Thames, and south to the campaigning troops. Bluff

Stockade controlled a Waikato River landing where men and stores were loaded into transport vessels for passage up-river to the war.

As the war moved south, troop numbers at Queen's Redoubt were reduced. In June 1864 it was reported that very few soldiers were at the post, and that there were few convoys from Drury since river transport was now used from the Waikato Heads to supply the occupation army in the Waikato (*Daily Southern Cross* 24 June 1864).

AFTER THE WAR

The Rev. Vicesimus Lush described Queen's Redoubt in January 1865 as being 'alive with soldiers' (Lush 1982: 46). On 17 July Lush was back at Queen's Redoubt conducting a morning service for the troops (Lush 1982: 50). On 19 August 1865 he returned to the redoubt and dined in the officers' mess on whitebait soup, eels and roast beef. Lush's host was Lieutenant Arthur Brittain, the commanding officer, Major Thomas Miller, being temporarily absent in Auckland. Both officers were of the 12th (East Suffolk) Regiment (Hart 1862: 247–248), and it seems that the 12th provided the garrison at the post at that time. Next day being Sunday, Lush conducted a morning service for about 50 soldiers (Lush 1982: 55).

Major Miller was still at Queen's Redoubt in June 1866, when the Rev. Lush again visited (Lush 1982: 87). While there, Lush learned that Governor Grey had issued a proclamation to the effect that the war was at an end. 'The Officers at Mess hoped that now they should escape from what they were pleased to call "this horrid country".' In August he again dined at the mess, but by March 1867 the military had quit Queen's Redoubt and Lush had to find alternative accommodation, greatly missing the officers' hospitality (Lush 1982: 110).

The end of Queen's Redoubt is signalled by an advertisement in *The New Zealand Herald* of Wednesday 13 March 1867, for an auction of buildings to take place at the redoubt the following Saturday at 10 a.m. In the same notice imperial authorities advertise the sale of '... all the houses, stores and buildings' at Te Rore, Whatawhata and Ngaruawahia. This marks the departure of imperial troops from the Waikato.

The advertisement lists 22 Queen's Redoubt buildings to be sold, 'with other lots too numerous to particularise'. The list of buildings is given here exactly as presented in the advertisement, since building sizes are not always clear—to the writer at least. Measurements include feet and inches.

3 BUILDINGS,	66 x 18, 6 x 7, 4
2 —	64 x 13 x 7, 4
6 —	54, 51 x 20, 4, 18, 6, 20, 6 x 8, 7, 4, 8, 6
1 —	50, 6 x 18, 6 x 8
3 —	49, 41, 37 x 18, 6, 10 x 7, 4, 8, 6
2 —	26 x 7, 6 x 6, 3
2 —	23, 18, 6 x 13, 12 x 7, 4
2 —	15, 5, 15 x 6, 18, 6 x 6, 3, 8
1 —	8, 6 x 6, 6 x 7

Examination of the figures gives the size of all the buildings—assuming a consistent order of dimensions—except for nine buildings in the third and fifth lines. In November 1867, the Rev. Lush (1982: 132) found the redoubt 'fast crumbling into ruins'.

In late 1868 a stockade was put up at Pokeno, '... on a hill west of the Queen's Redoubt. ...' to reassure an influx of new settlers who were coming into the district at that time (Morris 1963:

143 and 147). Next year, European settlers were alarmed at news of Te Kooti being in the Waikato. Pukekohe settler and newspaper correspondent William Morgan wrote in his diary on 24 July 1869: 'Waiuku and Wairoa Volunteers and Militia have. . .been sent up to Mercer and the Queen's Redoubt' (Morris 1963: 144). It is unclear if this reference is to a still defensible fortification or just to the location.

Some later history of the Queen's Redoubt site was recounted to the writer by the late Mr M. R. Dean, who visited the site in the course of the 1992 excavation. Mr Dean was born in 1914 into an old Pokeno family and lived most of his life in the district. He recalled the redoubt ditch full of water and stated that it was filled in by Johnny Cronin in the 1920s by means of a horse and scoop. At that time the land was owned by 'old McDonald', presumably of the family remembered by McDonald Road, on the other side of Great South Road from Queen's Redoubt.

THE FORTIFICATION

Earthwork redoubts have a long history in European warfare, and in colonial or imperial wars of the 19th century and earlier. The plan shape—or 'trace'—of the earthwork was marked out on the ground, usually square or rectangular, but of other shapes as well depending on the lie of the land the engineer's wishes. Under the supervision of men of the Royal Engineers, the troops would then dig out a defensive ditch, in New Zealand usually 6 ft (1.8 m) deep and about 8 ft (2.4 m) across. The spoil was thrown up on the inner side to a height of 8 ft (2.4 m), to present an attacking force with a 14 ft (4.2 m) obstacle from the bottom of the ditch. Behind the parapet was a raised 'tread' on which defenders could stand to fire over the wall if necessary (see cross-section in Prickett 2002: 23).

Projecting bastions at two or more corners enabled the garrison to fire into the ditch should attackers get in beneath the walls. These were commonly in the form of an earthwork, although in some redoubts where a long-term role was envisaged loop-holed blockhouses were used, as at Queen's Redoubt. Examples of blockhouse bastions can still be seen at Manaia Redoubt, south Taranaki (see Prickett 1994: 16). There was usually just one entry to redoubts, this being a weak point. Queen's Redoubt was one of only two redoubts in New Zealand known to have more than one entry, the other being Camp Waitara in Taranaki, dating from 1860. A drawbridge over the ditch to the gate was raised at night for security.

Most New Zealand redoubts were small. One and two company earthworks were *ca* 35 yards (32 m) and 42 yards (38.4 m) square respectively—giving areas of 1024 and 1475 square metres. A company in the British army comprised about 120 officers and men. Redoubts were mostly located in open country, on level or nearly level ground, to offer a good field of fire for defenders. Like other New Zealand War fortifications—Pakeha and Maori, redoubts could have a variety of roles, tactical—that is, for short-term battlefield advantage, or strategic—designed to hold a frontier, protect communications, or occupy land.

Queen's Redoubt was 100 yards (91.4 m) square within the defences. At 8360 m² it was one of the largest British Army redoubts of any New Zealand campaign. The only work to match it in size was Camp Waitara, which was of an irregular shape, and built in two stages to total *ca* 8500 m² internally. Inside Queen's Redoubt was a central parade area, and 27 huts (see Figs 8 and 11) serving as guardrooms, officers' quarters, stores, hospital, and accommodation for 450 men.

THE PICTORIAL RECORD

Two photographs of Queen's Redoubt and its associated camp probably date from 1863 when there were large numbers of troops in the northern Waikato, before the war moved on to the



Fig. 8. Queen's Redoubt and camp from the south, 1863. (D.M. Beere Collection, Alexander Turnbull Library G96088½)

Waipa and Te Awamutu districts in early 1864. Prints of the D. M. Beere photograph are held in the Auckland War Memorial Museum (Lush Collection) and Alexander Turnbull Library. There is a pencil and watercolour copy of the Beere image in the Marmon Album, Alexander Turnbull Library. The second photograph is from the Ruck Album in the Auckland Museum library.

The Beere image (Fig. 8) shows Queen's Redoubt from the south, looking west of north. The extension of the Great South Road to the Mangatawhiri River runs across the picture, with a post and rail fence to one side of it in the right foreground. Sagg's farmhouse and shed are visible against trees in the distance at the far left (for the location, see Fig. 5). A gap in the trees on the skyline (above the right corner of the redoubt) shows where the Great South Road crosses the distant ridge.

The earth wall of the redoubt can be seen from the north-east to the south-west angles of the fortification. At the fort's extremities are small buildings, with gable ends facing into the redoubt interior and a hipped style of roof at the other (outer) end. These were blockhouse bastions, which sat on a platform jutting out from square of the redoubt, with access by way of a gap in the earth wall. The blockhouses would have had loop-holed walls, packed with earth, sand or gravel to stop incoming fire. The redoubt interior is tightly packed with huts, the smaller ones apparently clustered at the Great South Road end, where the main access would have been.

On the other side of Great South Road is a camp made up of *ca* 30 bell-tents and six larger tents, plus several small sheds and one large wooden shed. The tents would have accommodated troops who were part of the build-up at the post early in the campaign. More sheds can be seen on the redoubt side of the road. The foreground is dominated by bracken and tutu, while the redoubt and camp area is cropped grassland.

The Ruck Album photograph (Fig. 9) was taken from further from the redoubt than the Beere picture, and from slightly further east—so that the view is more to the north-west. The Beere picture appears to have been taken from a position on the ridge at the left of the Ruck image. The apparently identical location and size of huts in the two pictures suggests they were taken about the same time, although from the greater number of tents, the Ruck picture may be the earlier, and date from the height of the build-up of troops at the redoubt in July. Again the Great South Road and fence can be seen to the right, and Sagg's homestead is at the upper left. As in the Beere picture the bastion blockhouses delineate the redoubt.

A third view of Queen's Redoubt is a copy of an original drawing by Lieutenant Henry Stratton Bates (Cowan 1922–23 I: 241; Fig. 10). Bates was commissioned in the 65th Regiment in 1854, took part in the 1860–61 Taranaki War, and was Native Interpreter on Cameron's staff from 1861 to October 1863 (Raikes 1885: 44–45). The picture shows an extensive camp south of the stream, and tents north of the stream at the right, where none are shown in the two photographs. The Beere photograph has additions at both ends of a shed at the right, to show that Bates' sketch is earlier. Bates was at Queen's Redoubt in July and August 1863 (he took part in a 1 August reconnaissance of Paparata pa): his drawing probably dates from July.

Figure 11 is a perspective drawing from a broadsheet advertisement: 'Queen's Redoubt. Pokeno. Plan of Allotments for sale. Saturday 9th July 1864 at 12 o'clock.' It shows the redoubt from the north a year after the other pictures. To the right, across Great South Road, is Queen's Hotel; a church is shown on the east side of today's Selby Street. The 'Presbyterian Church Site' is marked on a May 1879 plan, SO 2024 (Land Information New Zealand). Although we cannot be certain of the drawing's accuracy, the earthwork bastions shown may by then have replaced the blockhouses pictured in 1863. The arrangement of 27 huts inside the redoubt appears to conform to the Beere photograph. Two huts between the fort and the stream may represent buildings visible in the photographs.

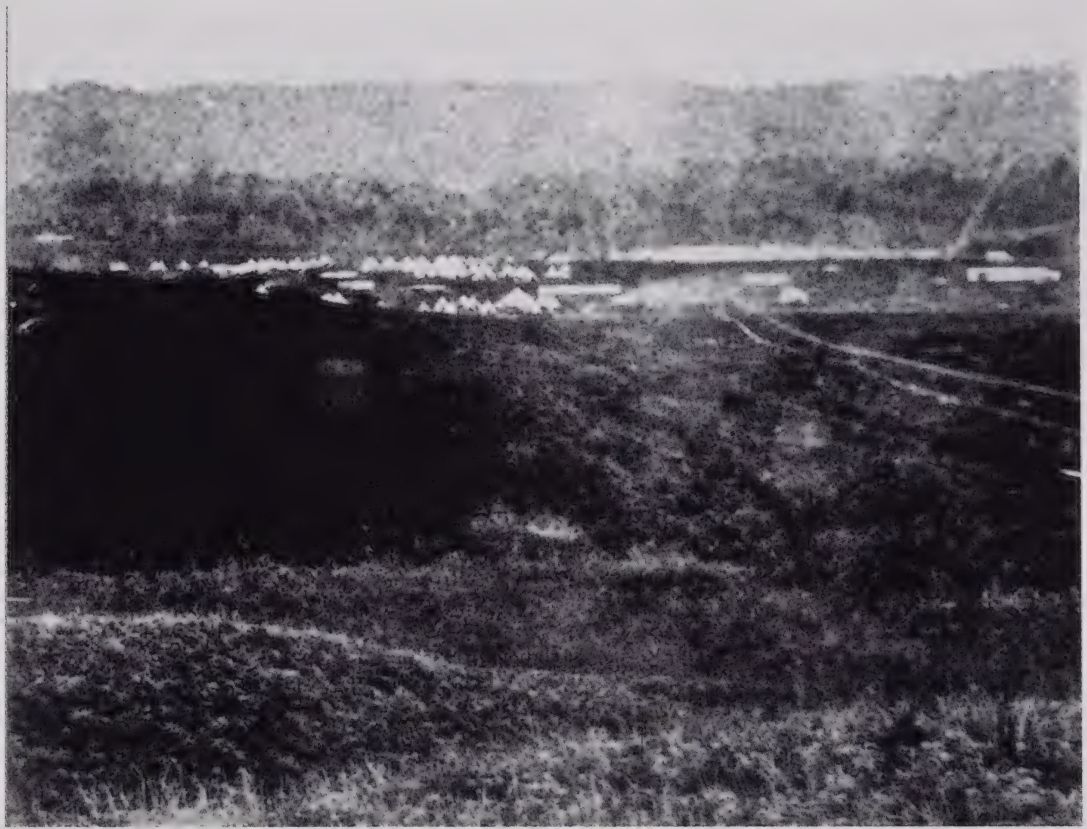


Fig. 9. Queen's Redoubt and camp from the south, 1863. (Ruck Album, Auckland War Memorial Museum)

Fig. 10. Copy of an original drawing of Queen's Redoubt, 1863, by Lieutenant Henry Stratton Bates (Cowan 1922-23 I: 241).



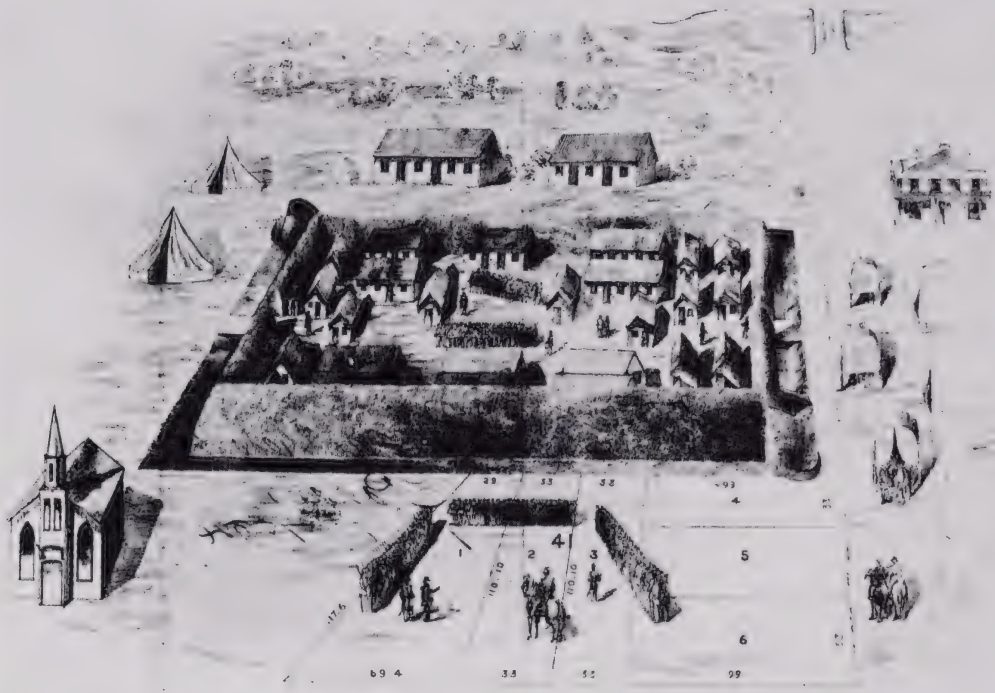


Fig. 11. Perspective drawing of Queen's Redoubt from a broadsheet advertisement: "Queen's Redoubt. Pokeno. Plan of Allotments for sale. Saturday 9th July 1864 at 12 o'clock." The advertisement includes a plan of the sections for sale. (Auckland City Libraries)

THE EXCAVATIONS

Archaeological excavations were carried out at Queen's Redoubt in the period 18–28 February 1992. Objectives were: examination of the defensive ditch and north-east corner bastion, some exploration of the redoubt interior, and recovery of items of material culture relating to the military period. Four areas were opened up and were numbered as the work began (Fig. 12). Excavation was carried out by hand, except for the use of a 'bobcat' digger to remove turf from excavated areas and partly excavate the Area I ditch. Artefacts recovered are described as a single assemblage in the next section of this report.

AREA I

A trench was excavated across the defensive ditch on the east side of the redoubt, *ca* 30 m south of the north-east corner bastion (see Fig. 12). Initial excavation was carried out by machine, after which an 8 x 1 m trench was excavated by hand across the ditch and for a short distance on adjacent banks to each side (Fig. 13). Fragmentary artefacts were found in all fill layers.

The defensive ditch was dug through topsoil into *ca* 1.7 m depth of stiff yellow clay, and below that, *ca* 300 mm into a hard yellow-red clay (Fig. 14). Fill was made up of four main

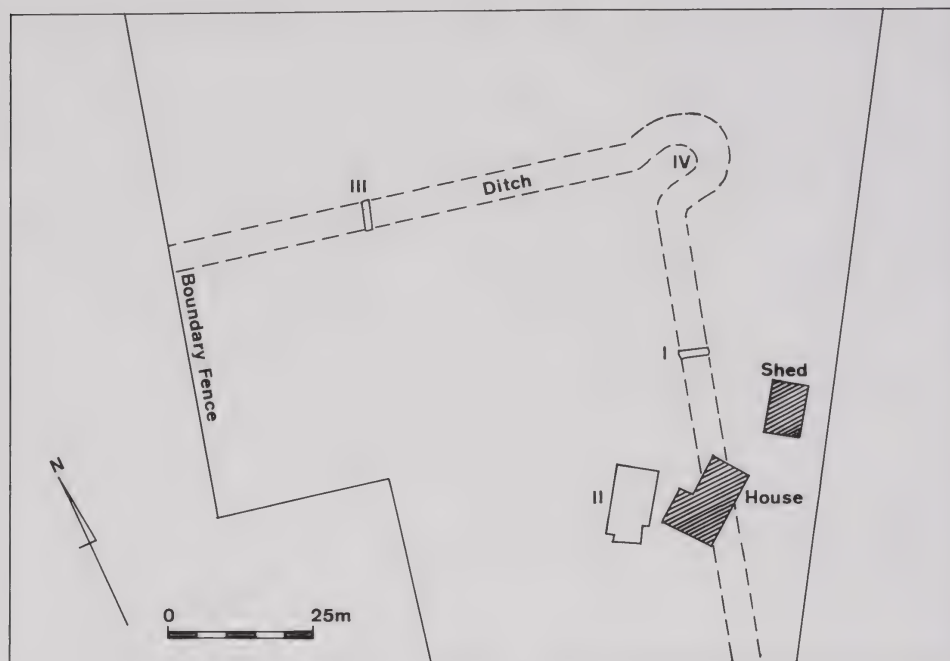


Fig. 12. Queen's Redoubt excavated areas.

For cultural reasons, this image has been removed.
Please contact Auckland Museum for more information.

Fig. 13. Area I showing the north side of the trench across the redoubt defensive ditch. Range poles intervals are 250 mm.

layers. Layer 1 was a soft yellow-brown loam, tending brown to the west and yellow to the east (outer) side of the ditch, including some lumps of brown material. The variation reflects material available on the two sides of the ditch when it was filled in the 1920s—the inner (west) side making use of what was left of the redoubt bank, and the east side including more clay from under the topsoil. Layer 2 was a uniform dark brown loam, made up of topsoil which will have been the first material put into the ditch in the filling operation. Layers 3 and 4 are made up of erosion fill washed into the ditch after abandonment of the site and before the ditch was filled in the 1920s.

The width of the redoubt ditch is revealed in the cross-section (Fig. 14). The flat bottom is *ca* 2.4 m (*ca* 8 ft) wide, and is *ca* 2.25 m below the ground surface—likely therefore to have been dug to an ordered depth of 8 ft if we allow for the lower level of the present ditch fill surface as a result of settling. Because of erosion of both sides of the ditch the width at ground level is more difficult to determine. Assuming the sides continue on the relatively steep angle of the bottom part of the ditch cross-section, the ground level width may have been *ca* 4.5 m, i. e. *ca* 15 ft.

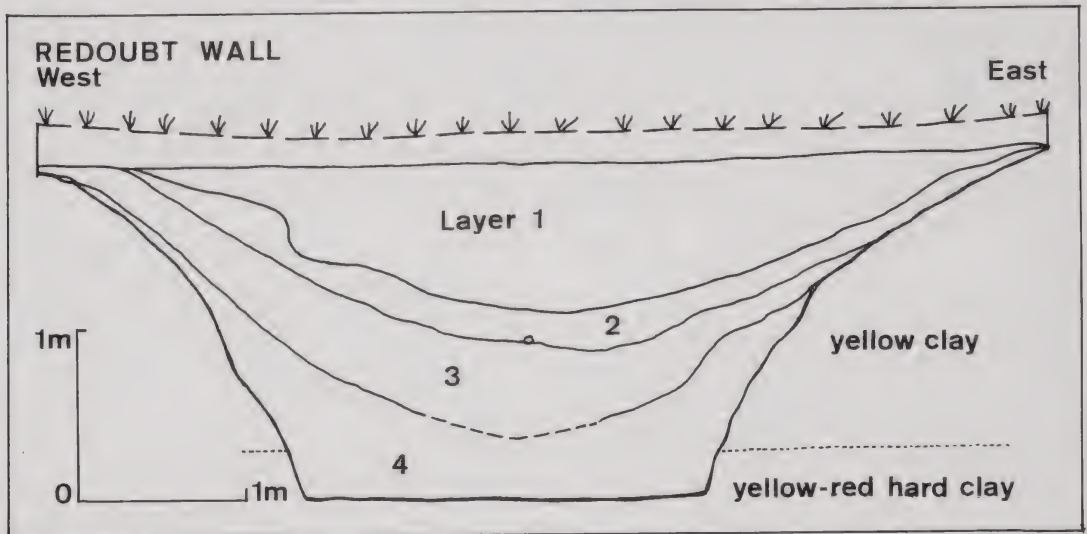


Fig. 14. Area I, north section. Layers 1–4 are described in the text.

AREA II

A small part of the redoubt interior was explored at Area II, by means of an irregular-shaped excavation *ca* 14 x 7 m (Fig. 15). Topsoil was stripped off by machine before excavation was carried out by hand. Fragmentary artefacts were found throughout the area.

The excavation revealed 28 postholes, probably belonging to two adjacent buildings *ca* 2.5 m apart (Fig. 16). In neither case was the complete building found. Most postholes were shallow, 12 being less than 150 mm in depth and except for two, no others being more than 310 mm. The exceptions were 430 mm and 470 mm deep respectively ('A' and 'B' in Fig. 16). All postholes are likely to belong to regularly arranged foundation piles, except for two pairs of smaller holes ('C'), probably on the sides of a building *ca* 5.5 m wide. This may relate to the common 18 ft 6 inch Queen's Redoubt building width, as in the March 1867 auction list (see above). The building length was not determined, but was at least 9 m. The only feature other than postholes was a slight scarp of 50–100 mm at the south corner of the excavated area ('D').



Fig. 15. Area II, view to the north showing the gap between postholes of two adjacent buildings. The Area I and IV excavations can be seen in the background.



Fig. 16. Area II, excavation plan.

AREA III

The defensive ditch was further investigated half-way along the north side of the redoubt (see Fig. 12). This was about where one of the two gates is shown in the 1864 perspective drawing (Fig. 11), and it was hoped to obtain some knowledge of the gateway arrangement. In the event, no evidence of an entrance was found, Area III providing only another ditch cross-section to add to that of Area I (Fig. 17).

Material in the Area III redoubt ditch is made up of a similar four layers to that in Area I. Layer 1, as much as 1.2 m deep in the middle of the ditch, is loose yellow fill including lumps of brown material. Falling into the ditch from the south side (from the redoubt wall and interior) are bands of yellow clay and black soil, 50–80 mm thick. Layer 2 is mostly loose brown fill with some blocks of black and paler material. Layers 1 and 2 are made up of material dumped in the ditch by the in-filling that took place in the 1920s, and in the same manner as in Area I. Layer 3 is re-deposited yellow clay. Layer 4 is compact, water-deposited grey clay including some iron rust, to suggest water lying in this part of the ditch, probably after abandonment of the redoubt.

The ditch dimensions proved similar to that in Area I. In Area III the flat bottom of the ditch was *ca* 2.3 m (7 1/2 ft) across, i. e. *ca* 100 mm less than the base width in Area I. From the bottom, the Area I and III ditch profiles both climb steeply for a metre or more before becoming less steep. The Area III ditch sides may be closer to the original profile, being steeper than in Area I, which appears to have suffered more from damage during filling-in and by natural erosion before then. Thus Area III may give a better indication of the width of the ditch at ground level, at *ca* 4.8 m across (16 ft).

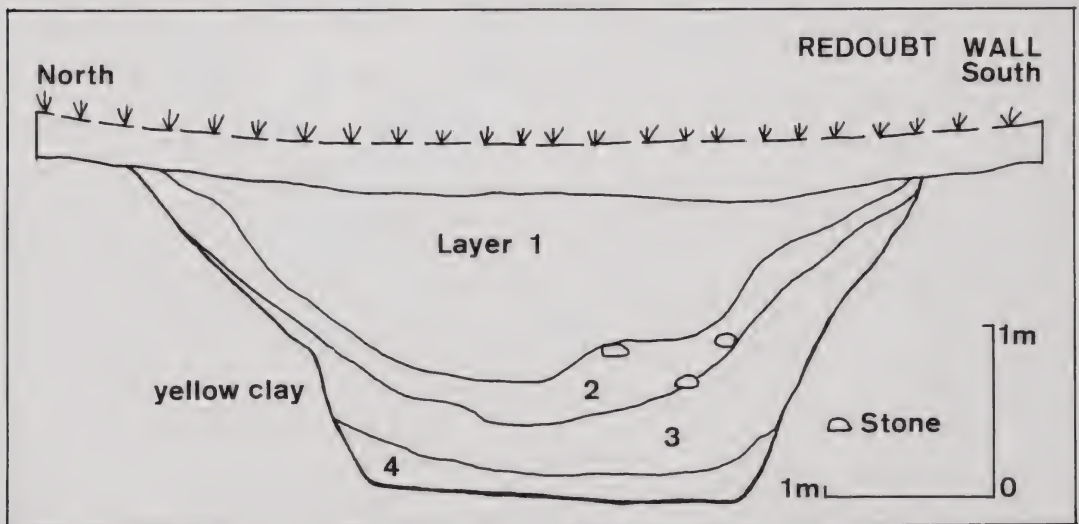


Fig. 17. Area III, east section.

AREA IV

An irregular-shaped excavation at the north-east corner of the redoubt explored the bastion and the defensive ditch around it (Fig. 18). Excavation of the whole of this large and complex area was not possible in the time available, so that the location and description of the redoubt ditch where it rounded the bastion involved five partly or fully excavated trenches, across the defensive ditch and more extensively in the area of access from the redoubt interior into the bastion. These



Fig. 18. Area IV, view to the north–west from outside the redoubt, across the defensive ditch to the pebble path into the bastion (at right of the two figures). The Area III excavation can be seen in the background.

revealed a defensive ditch *ca* 5.75 m across at ground level, i. e. slightly wider than was apparent at Areas I and III. Part of the outer rim of the defensive ditch was followed as it began to loop around the bastion, thus allowing projection of the outer rim of the ditch around the redoubt angle (see Fig. 20).

Descending from the redoubt interior to the bastion area was a stone path, 5 m long in the excavated area (it continued into the baulk), and 750–1500 mm wide (Fig. 19). The angular stones were probably broken by soldiers who quarried and broke up a great deal of stone in the course of road-making in the first half of 1862. For some reason it did not enter the bastion from mid-way between the two sides, but was close to the north wall of the redoubt, as can be seen in Figure 20. On the path was a horse-shoe (visible left of the vertical range pole in Fig. 19). South of the path, a short drain exited into the defensive ditch (see Fig. 20).

Excavations of the defensive ditch showed the defensive ditch encircling the bastion underwent a number of changes during the original construction phase. We know from Colonel Gamble that ‘caponnières’ at two opposite corners were planned from the very beginning (see above). Nonetheless, for ease of construction the ditch appears first to have been dug to a simple right-angled corner, then the bastion built up and the ditch enlarged to go around it.

Across the floor of the excavated trench was found a shallow and irregular ditch, *ca* 2.5 m from the base of the outer scarp, at about the correct place for the standard width of the bottom of the defensive ditch as established at Areas I and III. Since we know that there was a bastion



Fig. 19. Area IV, looking across the pebble path which gave access to the bastion (cut by the digger above the left end of the ranging pole). The top of a 1.75 m range pole marks the depth of the adjacent defensive trench. In the foreground is the beginning of a drain falling into the ditch.

here, and yet much of the ground needed for the bastion is taken up by fill, it seems likely that explanation is as follows (see Fig. 20):

1. the ditch at the redoubt corner was first dug out to a simple right-angle;
2. then excavated out to form a loop around a bastion;
3. a timber retaining wall was then put in, the bottom of which is marked by the irregular footing trench found at the base of the excavation;
4. the enclosed ground was then back-filled to form a bastion;
5. which provided support for the blockhouse.

Figure 20 shows the presumed base of the retaining wall extrapolated from the three places it was found. The feature is, however, very shallow for the base of a retaining wall, and so a question remains as to whether it would have been strong enough for the job. Nonetheless, the interpretation is the best fit of the available evidence, since we know there was a blockhouse here, which must have sat on an earth platform.

Another question to arise from the Area IV excavation is the purpose of the gravel path. This could not have provided access to a blockhouse, unless the latter had no floor, since it runs so far down into the bastion area as to leave no room for a building. It may date from building and backfilling the bastion platform prior to construction of the blockhouse. Alternatively, and more

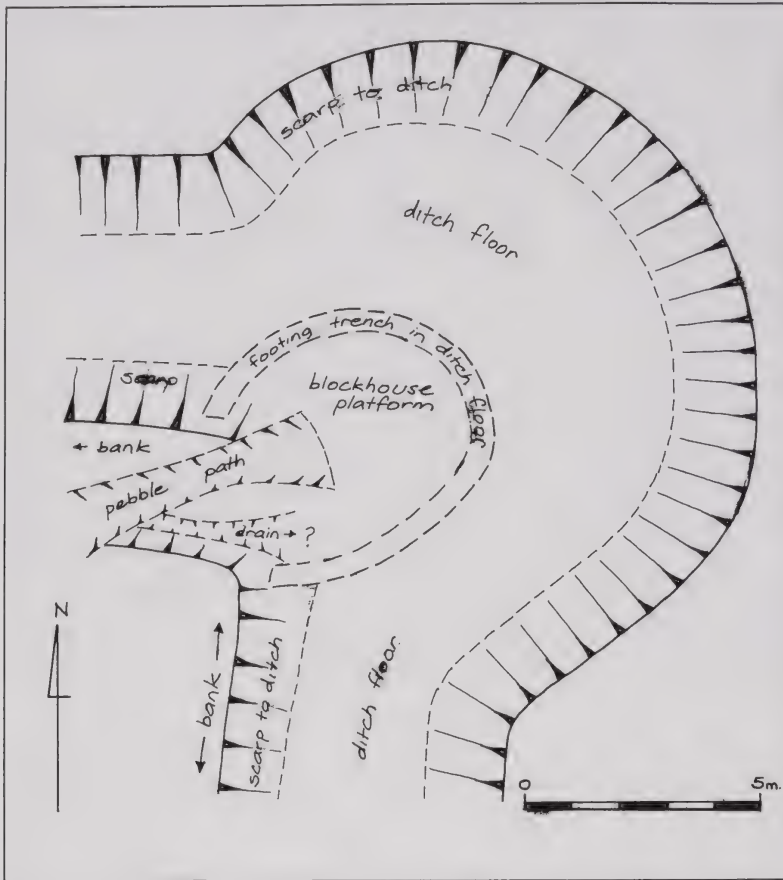


Fig. 20. Area IV: interpretation of the defences at the Queen's Redoubt north-east bastion, as revealed by excavation.

likely on the evidence, an earthwork bastion entered by the gravel path replaced the blockhouse shown in the 1863 illustrations. This has some confirmation from the lack of any building foundation holes cut into the path surface, and is shown on the 1864 perspective drawing (Fig. 11).

THE ARTEFACTS

With a single exception all artefacts are treated here as belonging to one collection, relating to the military occupation of Queen's Redoubt from June 1862 to mid-1867. A 20th century crown top 'ABC' quart beer was recovered from Area III, Layer 1. While it is recognised that other material may date from after the military occupation, there is nothing else that looks definitely to be out of place for an 1860s military site.

The material can be compared with other assemblages from military sites of the New Zealand Wars, notably Taranaki's Omata Stockade and Warea Redoubt (Prickett 1994), and the 40th Regiment Redoubt, Te Awamutu (Ritchie and Gumbley 1992).

Table 1. Queen's Redoubt excavated bottle and window glass (in grams).

AREAS	I	II	III	IV	TOTALS
'Black bottle' glass	3482.3	2182.7	1015.0	3622.9	10302.9
Green	1594.8	323.6	1717.8	177.2	3813.4
Aqua (pale green)	1900.9	391.0	193.6	242.3	2727.8
Case gin and schnapps	641.3	299.2		5.8	946.3
Colourless glass	414.2	286.1	74.0	40.5	814.8
Deep blue (castor oil)	321.0	54.2	144.3	61.0	580.5
Pale blue	405.5	63.7			469.2
Brown glass	228.5	26.7		5.8	261.0
Pink	19.2	9.4			28.6
Bright green		1.0			1.0
Window glass	74.4	82.9	11.8	17.7	186.8
TOTALS	9082.1	3720.5	3156.5	4173.2	20132.3

GLASS

As is usual in mid-19th New Zealand military sites, the most abundant bottle glass is from so-called 'black bottles', the glass actually being dark green in colour against the light. Olive Jones (1986: 9), who is responsible for the outstanding study of 'black bottles' for the period 1735–1850, states that they held wine, porter (a dark sweet beer brewed from black malt, popular in the 19th century), also other beers, cider, distilled liquors and other products. The Queen's Redoubt material has only one marked item, a base embossed with an eight-rayed star at the centre and 'W' nearer the margin. Quart 'black bottles' are in two diameter classes of *ca* 77 and *ca* 90 mm respectively (see Ritchie and Gumbley 1992: 35).

The second largest quantity of glass by weight is from green quart bottles. This includes ring sealed beer bottles and high 'kick-up' brandy bottles, which cannot always be distinguished in fragmentary material. At the Omata Stockade (Prickett 1994: 43) the latter bottles contained brandy in every case where the label has survived. Ritchie and Gumbley (1992: 40) picture some complete examples. An intact ring sealed beer was recovered in Area III, Level 1 (c. f. Ritchie and Gumbley 1992: 36). Case gin and schnapps bottles were made square (hence 'square gin') to fit economically into cases for export (Prickett 1994: 51–52). At Queen's Redoubt, schnapps is represented by the most common brand, Udolpho Wolfe's 'Aromatic Schnapps', from Schiedam, Holland. The only complete case gin top is of the tall style, not the so-called 'pig's snout' (c. f. Prickett 1994: Fig. 2.36B); a 55 mm square base is embossed with a 13-rayed star; other case gin bases are 65 mm square. Brown quart bottles such as contained German bitters at Omata (Prickett 1994: 50), are also represented at the Queen's Redoubt site.

Pale green ('aqua') glass includes many differently shaped bottles with a wide variety of contents, from large (quart size) cylindrical bottles, generally thought to have contained whisky (see Prickett 1994: 45; and Ritchie and Gumbley 1992: 41), salad oil bottles, pickle jars, small medicinal bottles, etc. Items of note include the base of a whisky bottle embossed 'LDN/ 664'. Salad oils included chevron patterned fragments (c. f. Prickett 1994: Fig. 2.32J) and a base embossed 'A/ C/ B/ Co' (c. f. Prickett 1994: Fig. 2.32L). Fragments of a Lea and Perrins Worcestershire Sauce bottle and an embossed Lea and Perrins glass stopper confirm the presence of the popular

condiment. Pickle bottles are fragments are embossed 'E. RIM. . .', or 'A' on the moulded base. A Hamilton patent ('torpedo') bottle fragment, embossed '. . .CK. . .' is probably from an Auckland manufacturer of aerated waters.

Dark blue glass comes from long-necked castor oil bottles, well represented at the Te Awamutu 40th Regiment redoubt site (Ritchie and Gumbley 1992: 49, 75). Pale blue glass includes pieces of a 59 mm square-sectioned bottle embossed 'R. . .' at the shoulder, and to the bottom of the bottle '. . .END' on one side and '. . .WS' on the other, also a small round bottle lightly embossed 'NEW YORK', and a small bottle of rectangular medicinal style.

Colourless glass includes fragments of a variety of containers and tableware. From the table comes a stemmed wine glass, and two handle fragments from a cup or small jug and from a large jug. Also represented are tumblers and cut glass from sugar bowls, vases, jugs or other such items. Where they can be positively identified containers are small bottles, some pieces apparently from items similar to 'capers' bottles at Te Awamutu (Ritchie and Gumbley 1992: 47). A small oval bottle is highly decorated with vertical bands of lines and dimpling and embossed 'GB 296' on the base; another small round bottle is embossed 'RO. . .' and '. . .BRIARS'.

Pink glass is from a small long-necked bottle. Dark green is a base piece also from a small bottle.

CERAMICS

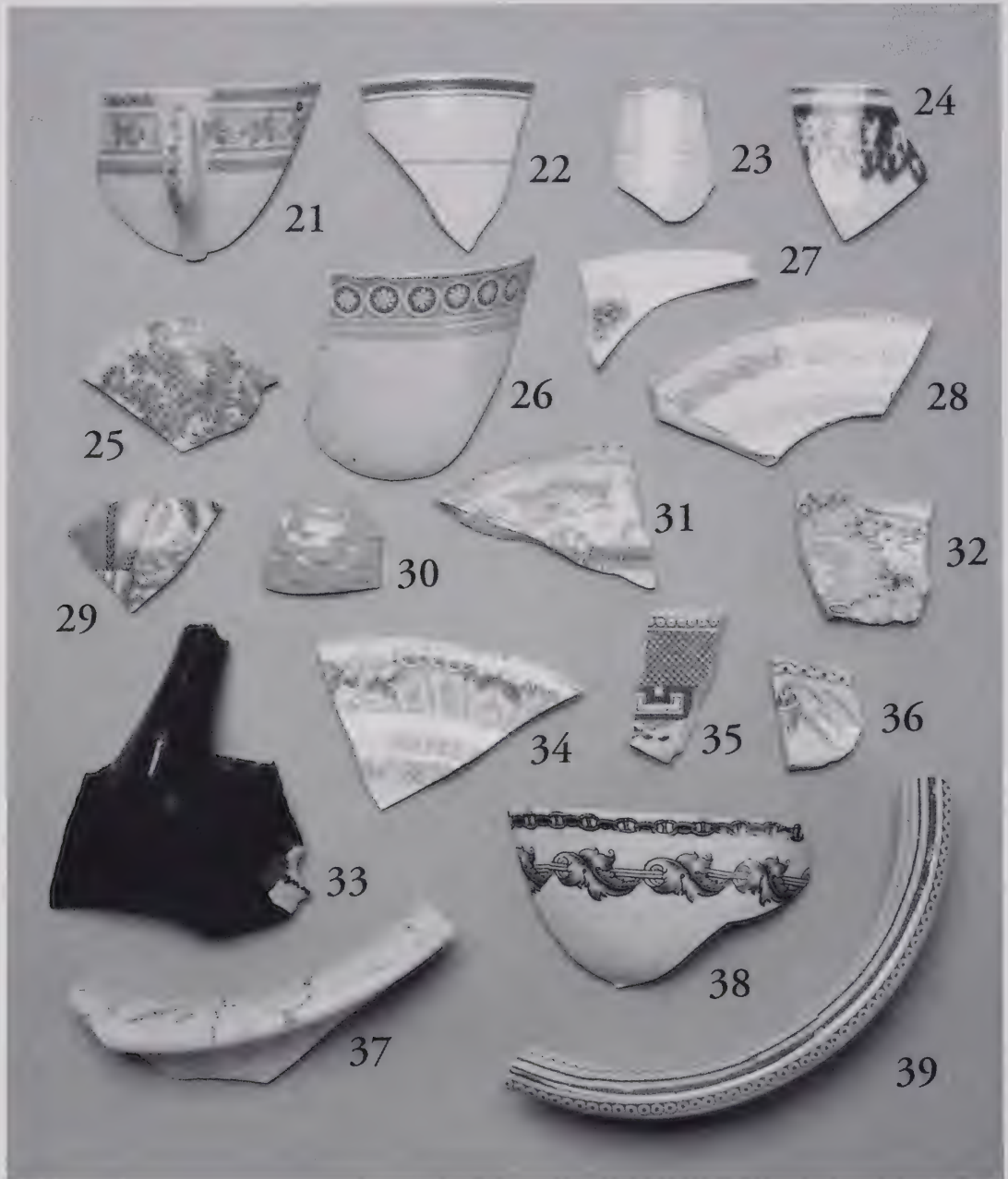
Among ceramics are stoneware, china and porcelain, all material but for a 'penny ink' in the form of broken pieces. Stoneware includes fragments of two large crocks *ca* 200 mm in diameter and 190 mm from the base to the shoulder, with off-white glaze on the body and a yellow/brown shoulder. The broken base of what may have been a ginger beer bottle of the same colours is 66 mm in diameter. The intact 'penny ink' is from the stone path in Area IV, with another piece found in Area III. There were also fragments of brown bottles or jars, 63, 70 and *ca* 80 mm in diameter. A near complete off-white flat top of an open-mouthed jar is 105 mm in maximum diameter, with the rim flange beneath indicating an internal diameter of the jar itself of *ca* 86 mm. The top and spout of a brown glaze ink bottle is similar to Doulton inks illustrated from Te Awamutu (Ritchie and Gumbley 1992: 114).

Two pieces of stoneware have makers' marks. A bottle with grey and white flecked glaze is stamped near the bottom 'REED(?) / LONDON'; it is *ca* 85 mm diameter and measures 150 mm to the sharply defined shoulder. A white glaze bottle or jar stamped 'DOULTON / LAMBETH', *ca* 65 mm diameter, may have contained ink.

While not strictly stoneware, other product containers may be mentioned here. Pieces of white and cream glaze cylindrical cheese or meat paste pots are as illustrated from Warea Redoubt (Prickett 1994: 115). Also found were fragments of Holloway's ointment pots (see Prickett 1994: 55). A white glaze fragment may be from an insulator used in the military telegraph line, which reached Queen's Redoubt early in the 1863–64 campaign (see above).

China included fragments of a range of underglaze transfer printed and other wares typical of the period. A huge range of such material has been found in New Zealand historic sites, especially in urban sites such as His Majesty's Theatre, Auckland (Plowman 1998). Cups, bowls, dinner plates, saucers, chamber pots and a teapot and serving dish are represented among Queen's Redoubt material illustrated in Figures 21–39. It is mostly underglaze transfer printed ware, with some painted decoration, 'sponged ware', 'marbled ware' and pattern moulded wares.

Figure 21 is a blue transfer printed cup with a loop handle. Two other cup pieces have painted banding identical except for colour, red (Fig. 22) and pale blue (Fig. 23) respectively. Figure 24 is a cup piece of deep blue/purple sponged ware decorated inside and outside the rim.



Figs 21–39. Examples of underglaze transfer printed ceramics. Descriptions are in the text.

This was a cheap form of decoration used in the Staffordshire potteries in England in the 19th century (Savage and Newman 1985: 270). A brown transfer printed cup is shown in Figure 26, and Figure 30 is a pale blue cup of moulded woven pattern. Figure 25 is a bowl fragment of blue transfer print 'fibre' pattern. Another bowl, illustrated in Figure 27, is of sprigged ware porcelain

(Savage and Newman 1985: 271). Two other bowls are of black transfer print (Fig. 38) and brown transfer print including a scene with palm trees (Fig. 29).

Dinner plates are represented by purple underglaze transfer print (Fig. 34), grey transfer print 'Rhine' pattern (Fig. 32), and two of blue transfer print decoration (Figs 28 and 31). Figure 36 shows a blue decorated saucer. The well-known 'willow' pattern is represented by fragments including that of a heavy serving dish pictured in Figure 35. There is a brown glaze teapot (Fig. 33), and two chamber pots, with purple marbled ware (Savage and Newman 1985: 186; Fig. 37) and a green transfer printed linear border (Fig. 39) respectively.

CLAY PIPES

Fragments of clay tobacco pipes were found in all four excavated areas, although very little came from Area I (see Table 2).

Smoking was a popular activity in Queen Victoria's army, clay pipes being the preferred means for officers and men alike. It was only late in the 19th century that briar pipes came into common use, especially by wealthier individuals. Clay pipes made for a hot smoke, but were widely available and cheap. They were made until 1967 at the McDougall factory, Glasgow (Walker and Walker 1969: 32), although by then had long since been supplanted by cigarettes as the common form of tobacco smoking.

At Queen's Redoubt, the Glasgow firm of McDougall is represented by six stamped stems and one bowl piece stamped 'McDOUGALL/GLASGOW' in a shield. Other Glasgow makers, Thomas Davidson and Co., and A. Coghill, are each represented by a single stem piece. McDougall and Coghill were making pipes throughout the period Queen's Redoubt was occupied. The firm of Davidson began production after taking over the older Glasgow firm of Murray in 1861 or 1862 (see Prickett 1994: 65). The only other identified manufacturer is Thomas White, Edinburgh, represented by one stem fragment. Two stems are marked 'GLASGOW', but without a maker's name, and there is a 'TD' bowl fragment with spur. An embossed stem fragment is stamped '...ETS...'

Table 2. Queen's Redoubt clay pipe material (in grams, 90 pieces—in brackets).

AREAS	I	II	III	IV	TOTALS
Complete bowls	—	—	—	29.9(2)	29.9
Decorated bowl pieces	—	1.7(1)	20.2(2)	9.6(6)	31.5
Plain bowl pieces	—	13.6(8)	3.8(2)	19.6(12)	37.0
Named/decorated stem pieces	—	9.0(5)	6.3(2)	20.5(7)	35.8
Plain stem pieces	4.1(2)	18.6(13)	13.6(7)	29.9(15)	66.2
Stem/ bowl pieces	—	3.1(1)	—	8.8(2)	11.9
Spurs	—	—	—	1.6(1)	1.6
Grips	—	0.9(1)	1.1(1)	—	2.0
TOTALS	4.1	46.9	45.0	119.9	215.9

The dominance of McDougall pipes in the small Queen's Redoubt group compares with the Omata Stockade, where 29 McDougall pieces make up half the total, with the remainder including 11 other manufacturers (Prickett 1994: 62). At the 40th Regiment redoubt, Te Awamutu, McDougall pipes were three of only five pieces identified as to maker (Ritchie and Gumbley

1992: 116). At Warea Redoubt, the common maker was Davidson, with 22 of 35 manufacturers' names (Prickett 1994: 116); there were also 11 McDougall and two Murray sherds. At the 1840s and early 50s Paremata Barracks near Wellington, 80% of 30 pieces identified as to maker came from the Glasgow firm of A. Coghill (Prickett 1981: 126).

Decorated items include a bowl/stem piece with what looks like an acorn embossed on it. There is a small fluted bowl fragment. At the end of clay pipe stems is a small 'grip' to enable the teeth to hold the pipe while smoking, two of which were found in the excavations. When these broke off, as often happened, the broken end of the remaining stem might be smoothed off for reuse, as occurred to one undecorated stem piece in the collection.

BUTTONS

Twenty-eight buttons were recovered, 14 of them from Area IV. British Army brass 'other ranks' uniform buttons include 13 of the 'large' *ca* 1 inch (25.4 mm) size, two 'small' buttons *ca* $\frac{3}{4}$ inch (19 mm), and two 'cap' buttons, *ca* .6 of an inch (15.2 mm) in diameter (see Ripley 1971: 9). There is also an officers' gilt button, seven 'small chinas' and three metal trouser buttons.

In 1855 the British Army replaced the previous waist-length 'shell jacket' with a tunic for use by officers and men (see Ryan and Parham 2002: 29–31, 49–51), at the same time discarding the old pewter buttons long used by other ranks in favour of brass buttons of a new design in the three sizes outlined above (Ripley 1971: 7–9). Officers continued to use gilt buttons—to the new design. Other ranks used the new buttons until 1871, when a standard design showing the Royal Arms was adopted for all except a few specified corps. Officers wore the 1855 button until 1881. Rank and file buttons found at Queen's Redoubt are of the 1855–1871 style.

Of the 17 brass buttons, six are represented by backs only and two more are very fragmentary. Regiments represented are the 12th (four 'large' and one 'small' button), 14th (four 'large'), and 40th (one 'large'). Back marks which can be read are 'P. TAIT & Co/E&WS / PATENT/ LIMERICK' (three on 12th and 14th Regiments buttons), and one each of 'FIRMINS / LONDON' and 'SMITH, KEMP & WRIGHT / BIRMINGHAM' (both of them backs only).

A 22 mm diameter Royal Artillery gilt officers' button appears to fall between the standard 'small' and 'large' sizes as defined by Ripley. As much of the back mark as can be made out may be '. . . ENNENS & Co / LONDON'.

'Small china' buttons were stamped out of dry clay by a process developed about 1840 by Richard Prosser of Birmingham (see Prickett 1994: 69). At Queen's Redoubt they fall into two groups, *ca* 8 mm and 10.5–11 mm in diameter (and may be compared with Type 1A and C in Prickett 1994: 71). Buttons like this were used on underwear. Larger one-piece buttons, stamped from a thin brass or iron sheet are usually referred to as 'trouser buttons', although may also have been used on shirts and other garments. The three found at Queen's Redoubt are 17 (two buttons) and 15 mm diameter. The smaller one is a simple shallow dish with four holes and no makers mark; details of the larger two are obscured by rusted iron.

FIREARMS

Three items relating to firearms are a .577 inch (14.7 mm) calibre bullet and percussion cap, both belonging to the Enfield rifled musket, and a fragment of flint from a flintlock firearm. The Enfield Pattern 1853 was the standard infantry weapon of the British Army from the Crimean War to 1866, when the Snider breech-loading Enfield conversion was adopted and progressively issued to line regiments (see Pegler 1998). The percussion cap is of the so-called 'top-hat' style, as illustrated by Pegler (1998: 80).

Since the British Army had ceased to use flintlock weapons in the 1840s, the question arises—

why is there a gun-flint at Queen's Redoubt? The answer may lie in the sporting nature of British officers, for whom duck shooting was a popular occupation (see for example Lennard 1986: 22–23). Sporting shooters can be very conservative, preferring the old and favoured over modern weapons. Another possibility is that the gun-flint is a souvenir of fighting in the district, since Maori are known to have made use of flintlock weapons in the Waikato War.

MISCELLANEOUS IRON AND OTHER METAL ITEMS

Iron items were all highly rusted, and in some cases too obscured or degraded for identification. Relating to buildings or other structures are a few cut and wire nails and staples. Doors or gates are represented by a bolt, several door hinges and a door knob, and three or more large strap hinges, all in poor condition. There was a heavily rivetted fragment of what might have been a ship's tank, a 100 mm long heavy-duty iron hook and part of a *ca* 300 mm diameter iron frying pan. Other materials include a small piece of lead sheeting—likely to be flashing from a corrugated iron roof, short lengths of copper wire and a 10 mm long bass screw.

A heavy-duty axle hub from Area I is 240 mm long. Increasing in diameter from 70 to 80 mm, with flanges at the larger end, presumably designed to hold the wheel in place, this item clearly is designed to carry a considerable weight and may be from a gun carriage or ammunition cart. Also relating to horse-drawn transport is a hame—one of two attached to the collars of draught animals for holding harness traces. There are iron harness buckles and fragments of copper-rivetted heavy leather. Two horseshoes include one from the Area IV path.

A small double-bladed pocket knife, 75 mm x 12 mm, was held together by a brass frame, with a rivetted wooden handle finished off with brass fittings at both ends. A larger pocket-knife, also double bladed, was 87 x 15 mm with a rivetted wooden handle with brass at the hinge end only.

OTHER ITEMS

A few fragments of faunal material are made up of three horse teeth, a cattle cervical vertebra and a possible horse cervical vertebra bone, and four pieces of cockleshell. Red-orange and grey-white brick pieces were recovered, in small quantities apparently scattered from demolished structures.

DISCUSSION

Queen's Redoubt was a major military fortification and camp, which probably had more British troops and colonial forces stationed there or passing through than any other European fieldwork of the New Zealand Wars. The accommodation for 450 men in huts within the earthwork defences is far in excess of other European military posts. There was also an extensive camp of tents and huts outside the fort, especially in 1863 when there was a build-up of troops early in the Waikato campaign.

The importance of the fortification is shown by the size of its defended area, at 8360 m² (100 x 100 yards), eight times that of a standard one-company campaign redoubt in New Zealand and more than five times larger than a two-company redoubt. Excavations show the ditch to have been dug probably to ordered dimensions of 8 feet (2.4 m) depth, 7½–8 feet (*ca* 2.3–2.4 m) across the bottom and 15–16 feet (*ca* 4.5–4.8 m) across the top. Again, this is hugely bigger than the standard redoubt in New Zealand of 6 feet (1.8 m) depth and 8 feet (2.4 m) across at ground level.

Evidence of huts was found in the form of mostly shallow holes for foundation posts. Parts of two buildings were found, one of which was probably 5.5 m wide and of an unknown length. The 5.5 m conforms to a standard 18 feet 6 inches hut width, as given in the March 1867 sale advertisement (see above). A variety of lengths for such huts also can be established from the advertisement.

Artefactual finds are similar to those of other excavated mid-19th century New Zealand military sites. Glass is generally from bottles containing alcohol. Ceramic items are mostly 19th century underglaze transfer print material. Clay pipe pieces that can be identified are all from Scottish makers, dominated by the Glasgow firm of McDougall. The most common type of button is the brass 'other ranks' military button, in this case of the 12th, 14th and 40th regiments. There is also a Royal Artillery gilt officers' button. Other buttons are 'small chinas' from underwear, and iron trouser buttons. Among iron and other metal material are locks and hinges—presumably from demolished buildings or gates. Relating to transport are a heavy-duty axle hub, harness hame, harness buckles and leather, and two horseshoes.

The Queen's Redoubt excavation reported here took place more than ten years ago. Since then there have been considerable changes in regards to the archaeological study of New Zealand War sites. The Queen's Redoubt site itself has been purchased by the Queen's Redoubt Trust, which plans to carry out a series of excavations in order to progressively describe the historic site and interpret for the public the place and the part of New Zealand history in which it played so important a role.

Assemblages from military sites now have a wider context of material culture studies. Urban excavations undertaken as mitigation exercises have rapidly increased knowledge of 19th century material culture in New Zealand, most significantly of glassware and ceramics which makes up the bulk of every assemblage. At the same time there has been development overseas in the study of 19th century material culture (see for example, Brauner 2000). The worldwide dispersal of the products of northern hemisphere industry means that 19th century assemblages in North America, and Australia and elsewhere will be similar to those recovered in New Zealand.

Archaeology has the potential to throw considerable light on the course of the New Zealand Wars, on the strategies and tactics of the two sides, on technological, economic, social and political aspects of the struggle, and on political outcomes of the military conflict. The campaigns were fought and decided in the field, where archaeology is uniquely able to describe and interpret the evidence. The course and outcome of the New Zealand Wars were crucial in New Zealand history. In a long struggle fought out almost entirely at fortified positions, and in which the strategic use of fortifications was critical in the final outcome, Queen's Redoubt was one of the most important fortification put up by either side.

With regard to archaeological study of the New Zealand Wars, a major current issue is the rapid loss of important sites as a result of land development and changes in land use. Sites are being lost without any investigation far more quickly than any research or excavation programme can be carried out. Often there is no prior knowledge of destruction, administration of the Resource Management Act signally failing in respect of archaeological sites. The excavation of more New Zealand War sites is a matter of urgency for improved historical and archaeological knowledge of a critical part of our history.

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Fenella Barton provided me with a copy of Colonel Gamble's 1862 sketch map of the Great South Road, held at the Public Record Office, London. Janice Fraser and Hans Bader assisted in identifying ceramic material. Brian Gill identified animal bone. Drawings are the work of Caroline Phillips and Kate Hill.

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